

1. (AMENDED) A device comprising:

an outer portion comprising an electrically insulative material, having dimensions effective to (i) prevent or inhibit plasma arcing to an electrically conductive surface of a plasma processing chamber aperture and (ii) fit said plasma processing chamber aperture within a predetermined tolerance; and

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an inner opening, completely surrounded by the electrically insulative material of the outer portion, having dimensions effective to enable transmission of a physical signal,

10 a gas, a gas mixture or other material through the device.

2. A plasma processing chamber having:

at least one aperture therein, the at least one aperture having an exposed electrically conductive surface, and

the device of Claim 1, located inside the aperture.

3. A method of making a plasma processing chamber, the chamber having at least one aperture therein, the at least one aperture having an exposed electrically conductive surface, the method comprising inserting the device of Claim 1 into the aperture.

4. A method of processing a workpiece, comprising the following steps:

(A) exposing the workpiece to a plasma in the chamber of Claim 2; and

5 (B) transmitting a physical signal or a gas, gas mixture or other material through the device into or out from the chamber.

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5. (AMENDED) A plasma processing chamber having:

at least one aperture therein, the at least one aperture having an exposed electrically conductive surface, and

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5 *[Handwritten signature]* a device inside the aperture, the device comprising an electrically insulative material and having

(i) dimensions effective to (a) prevent or inhibit plasma arcing to the exposed electrically conductive surface of the aperture and (b) fit said aperture within a predetermined tolerance; and

10 (ii) an inner opening completely surrounded by the electrically insulative material, the inner opening having dimensions effective to enable transmission of a physical signal, a gas, a gas mixture or other material through the device.

6. (AMENDED) A method of making a plasma processing chamber, the chamber having at least one aperture therein, the at least one aperture having an exposed electrically conductive

surface, the method comprising inserting a device into the  
5 aperture, the device comprising an electrically insulative material  
and having:

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10 dimensions effective to (i) prevent or inhibit plasma  
arcing to the exposed electrically conductive surface of the  
aperture and (ii) fit said aperture within a predetermined  
tolerance; and

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12 an inner opening completely surrounded by the  
electrically insulative material, the inner opening having  
dimensions effective to enable transmission of a physical signal,  
a gas, a gas mixture or other material through the device.

7. The method of Claim 6, further comprising, prior to  
said inserting, the step of forming said aperture in said chamber.

8. (AMENDED) A method of processing a workpiece,  
comprising:

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10 exposing the workpiece to a plasma in a chamber, the  
chamber having at least one aperture therein, the at least one  
5 aperture having

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12 1) an exposed electrically conductive surface; and  
2) a device in the aperture, the device comprising  
an electrically insulative material and having

10 (i) dimensions effective to (a) prevent or inhibit plasma arcing to the exposed electrically conductive surface of the aperture and (b) fit said aperture within a predetermined tolerance; and

15 (ii) an inner opening completely surrounded by the electrically insulative material, the inner opening having dimensions effective to enable transmission of a physical signal, a gas, a gas mixture or other material through the device; and

(iii) transmitting a physical signal, a gas, a gas mixture or other material through the device into or out from the chamber.

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9. A method of operating a plasma processing chamber, wherein the chamber has at least one aperture therein and the aperture has an exposed electrically conductive surface, the method comprising the steps of:

5 (A) initiating a plasma in the chamber, the aperture having the device of Claim 1 therein, then

(B) cleaning the chamber and the device.

10. The method of Claim 9, wherein said plasma exists in said chamber for a predetermined period of time.

11. (AMENDED) The method of Claim 9, further comprising, prior to step B, the steps of:

exposing a workpiece to the plasma, and

transmitting a physical signal, a gas, a gas mixture or  
5 other material through the device into or out from the chamber.

Please add the following new claims:

12. (NEW) The device according to claim 1, further comprising:

a lower section having a first width effective to fit the  
plasma processing chamber aperture within said predefined  
tolerance; and

a higher section having a second width that is greater  
than a corresponding width of said plasma processing chamber  
aperture.

13. (NEW) The device according to claim 12, wherein  
said higher section is disposed outside of said plasma processing  
chamber aperture.

14. (NEW) The device according to claim 12, wherein  
said lower section has a first length and said higher section has  
a second length.

15. (NEW) The device according to claim 14, wherein said first length is greater than or equal to a length of a channel section of said plasma processing chamber aperture.

16. (NEW) ~~The device according to claim 1, wherein an end of said device has an angle, said angle measured with reference to a bottom of said device.~~

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17. (NEW) The device according to claim 16, wherein said angle is non-orthogonal.

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18. (NEW) The device according to claim 1, wherein said physical signal comprises a spectroscopic endpoint detection signal.

19. (NEW) The plasma processing chamber of claim 2, wherein said at least one aperture comprises an endpoint detection channel.

20. (NEW) The device according to claim 1, wherein the electrically insulative material is selected from the group consisting of ceramics, multi-crystal ceramics, polyvinyl polymers, polytetrafluoroethylene, polyethylene, polypropylene, polyimides, polycarbonates and single crystal insulative minerals.